US006117700A

United States Patent [19]

Orita et al.

[11] Patent Number:

6,117,700

[45] Date of Patent:

Sep. 12, 2000

[54] METHOD FOR FABRICATING SEMICONDUCTOR DEVICE HAVING GROUP III NITRIDE

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[21] Appl. No.: 09/389,024

[22] Filed: Sep. 2, 1999

[30] Foreign Application Priority Data

| | | | H01L 21/00 438/46 ; 438/22; 438/513; |
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| | | | 438/688; 438/796 |

[58] Field of Search

[56]

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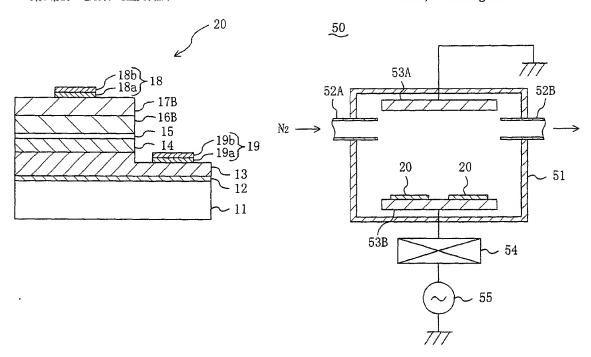
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[57] ABSTRACT

First, n-type contact layer of GaN, n-type cladding layer of AlGaN, active layer of InGaN, first Mg-doped layer of AlGaN and second Mg-doped layer of GaN are grown in this order over a sapphire substrate. Thereafter, the substrate, including the second Mg-doped layer, is exposed to nitrogen plasma for about 40 minutes. As a result, Mg, which has been introduced into the first and second Mg-doped layers, is activated as an acceptor. Thus, p-type cladding layer and p-type contact layer with low resistance and excellent crystallinity can be formed out of the first and second Mg-doped layers, respectively.

15 Claims, 9 Drawing Sheets



438/22, 46, 513,

438/688, 796